

CLAIMS

- 1    1.    A method of treating an exhaust gas containing ammonia and metalorganic  
2       vapour, the method comprising: partially removing the metalorganic vapour  
3       from the exhaust gas; and exposing the exhaust gas to an ammonia  
4       decomposition catalyst.
  
- 1    2.    The method according to claim 1, wherein the metalorganic vapour is  
2       removed by partially decomposing the metalorganic vapour within the exhaust  
3       gas.
  
- 1    3.    The method according to claim 2, wherein the metalorganic vapour is  
2       decomposed by exposing the exhaust gas to a heated bed of one or more  
3       materials.
  
- 1    4.    A method of treating an exhaust gas containing ammonia and metalorganic  
2       vapour, the method comprising: exposing the exhaust gas to a heated bed of  
3       material to cause the metalorganic vapour to decompose, and then exposing  
4       the exhaust gas to an ammonia decomposition catalyst.
  
- 1    5.    The method according to claim 4, wherein the exhaust gas is conveyed into a  
2       first chamber containing the heated bed and subsequently into a second  
3       chamber containing the catalyst.
  
- 1    6.    The method according to claim 4, wherein the exhaust gas is conveyed into a  
2       single chamber sub-divided into two zones by the heated bed and the  
3       catalyst.
  
- 1    7.    The method according to claim 4, wherein the catalyst is heated to  
2       decompose the ammonia into nitrogen and hydrogen.

- 1 8. The method according to claim 7, wherein the catalyst comprises nickel  
2 supported on a ceramic former.
- 1 9. The method according to claim 4, wherein the metalorganic vapour comprises  
2 a metal-alkyl vapour.
- 1 10. The method according to claim 4, wherein the metalorganic vapour comprises  
2 a group III metal.
- 1 11. The method according to claim 10, wherein the metalorganic vapour  
2 comprises at least one of trimethyl gallium, trimethyl indium, and trimethyl  
3 aluminium.
- 1 12. The method according to claim 4, wherein the heated bed comprises a metal  
2 and a metal oxide.
- 1 13. The method according to claim 12, wherein the exhaust gas is exposed to the  
2 heated metal and the exhaust gas exposed to the heated metal is exposed to  
3 the heated metal oxide.
- 1 14. An apparatus for treating an exhaust gas containing ammonia and  
2 metalorganic vapour, the apparatus comprising: means for partially removing  
3 the metalorganic vapour from the exhaust gas, and means for exposing the  
4 exhaust gas to an ammonia decomposition catalyst.
- 1 15. The apparatus according to claim 14, wherein the removing means comprises  
2 means for partially decomposing the metalorganic vapour within the exhaust  
3 gas.

- 1 16. The apparatus according to claim 14, wherein the removing means comprises  
2 means for exposing the exhaust gas to a heated bed of one or more materials  
3 for causing the metalorganic vapour to decompose.
- 1 17. An apparatus for treating an exhaust gas containing ammonia and  
2 metalorganic vapour, the apparatus comprising: exposing means for  
3 exposing the exhaust gas to a heated bed of one or more materials to cause  
4 the metalorganic vapour to decompose and for subsequently exposing the  
5 exhaust gas to an ammonia decomposition catalyst.
- 1 18. An apparatus according to claim 17, wherein the exposing means comprises  
2 first and second sequential stages in communication with each other and  
3 through which the exhaust gases pass during treatment, the first stage  
4 containing the heated bed and the second stage containing the catalyst.
- 1 19. An apparatus according to claim 17, wherein the exposing means comprises  
2 a single gas treatment chamber subdivided into two zones by the heated bed  
3 and the catalyst.
- 1 20. An apparatus according to claim 19, wherein the exposing means comprises  
2 a replaceable cartridge.
- 1 21. An apparatus according to claim 18, wherein the exposing means comprises  
2 a first chamber containing the heated bed and a second chamber downstream  
3 from the first chamber containing the catalyst.
- 1 22. An apparatus according to claim 17, comprising means for heating the  
2 catalyst to decompose the ammonia into nitrogen and hydrogen.